

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
KOBAYASHI, Kazunori

Taiyo Seimei Otsuka Bldg. 3F,
25-1, Kita-Otsuka 2-chome,
Toshima-ku, Tokyo 1700004
Japan

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing (day/month/year) 12. 7. 2005	
Applicant's or agent's file reference KP-10155	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/JP2005/006573	International filing date (day/month/year) 29.03.2005
Priority date (day/month/year) 30.03.2004	
International Patent Classification (IPC) or both national classification and IPC Int.Cl.⁷ G01N21/892, G01M11/00, G01N21/896, G02B6/00	
Applicant FUJI PHOTO FILM CO., LTD.	

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion 22.06.2005	
Name and mailing address of the ISA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer TANABE, Eiji Telephone No. +81-3-3581-1101 Ext. 3292

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**WRITTEN OPINION OF THE
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International application No.

PCT/JP2005/006573

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing

 - b. format of material
☐ in written format
☐ in computer readable form

 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006573

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>2, 4-11, 14</u>	YES
	Claims	<u>1, 3, 12-13</u>	NO
Inventive step (IS)	Claims	<u>8</u>	YES
	Claims	<u>1-7, 9-14</u>	NO
Industrial applicability (IA)	Claims	<u>1-14</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations

D1: JP 6-331557 A (Sumitomo Electric Industries, Ltd.) 1994.12.02, whole document

D2: JP 11-271175 A (Lucent Technologies Inc.) 1999.10.05, whole document

D3: JP 10-68700 A (NEC Corporation) 1998.03.10, 【0004】 - 【0005】 , Fig.3

D4: JP 2000-351646 A (Shin-Etsu Chemical Co., Ltd.) 2000.12.19, whole document

D5: JP 8-208264 A (Fujikura Ltd.) 1996.08.13, whole document

The subject matter of claim 1, 3, 12 and 13 does not meet the requirement of novelty. D1 discloses a product for detecting defects in the optical fiber, consisting of a laser light for illuminating the optical fiber, a CCD camera for receiving the reflected light from said optical fiber, and the product outputs the defect signal processed from reflected light image.

D1 discloses line sensor can be used instead of CCD camera in paragraph 【0049】 and said product can be installed in a manufacturing apparatus in paragraph 【0053】 .

A similar product is also disclosed in D2.

The subject matter of claim 2 and 14 does not involve an inventive step over D1 and D3. D1 discloses plural CCD cameras and plural illuminations can be used for receiving the reflected light from a hole in an optical fiber in paragraph 【0038】 . D3 discloses an apparatus for inspecting the surface of the optical fiber, which has three sets of LED and light receiving device, to inspect entire surface of the optical fiber. Therefore the person skilled in the art would easily conceive the idea of using three sets of CCD camera and illuminations on the product disclosed in D1.

The subject matter of claim 4 and 5 does not involve an inventive step over D1. D1 discloses glass fiber area is determined between reflected light P and Q on a scan line of an image data. The person skilled in the art can set a defect detection range between P and Q, and may take an appropriate time interval between setting a defect detection range.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006573

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V.2

The subject matter of claim 6 and 7 does not involve an inventive step over D1 and D4. D4 discloses an image process to determine size of bubbles in an optical fiber preform. A process of pixel combination is a common technique in the art of image processing. Therefore the person skilled in the art would easily conceive the idea to apply image processing to the product disclosed in D1.

The subject matter of claim 9 does not involve an inventive step over D1 and D5. D5 discloses a marking device to mark an anomaly mark on an optical fiber, where a bubble detector outputs an anomaly signal. Therefore the person skilled in the art would easily conceive the idea to apply a marking device to the product disclosed in D1.

The subject matter of claim 10 and 11 does not involve an inventive step over D1. D1 discloses the product disclosed in D1 can be applied to another transparent linear material in paragraph [0052]. It is well-known to the person skilled in the art that plastic optical fiber is such a material, which has a typical diameter of 250 μ m or more.